SHAH AND ANCHOR KUTCHHI ENGINEERING COLLEGE

CSI SAKEC

BUILDING TECHNICAL SKILLS PROFESSIONALLY

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The skill to heal.

Healthcare + Technology

The spirit to care.

The future of Nanotechnology in Health Care.

NUROBO : An e - Nurse.

Will Robots replace Doctors?

Message From

Head of Computer Department

I would describe the CSI Student Chapter as one of the most high-spirited and active student body in Shah & Anchor Kutchhi Engineering College. The student body has been organizing worthwhile events, ever since its formation in 2007. I have been associated with this body since the beginning, and can very proudly say that this year was no exception. Our tremendously hardworking students and our very supportive faculties successfully organized such productive events, namely Ethical Hacking, Chatbot - Build Intelligent Virtual Assistant, Test Driven Development Using Java, Gateway to GATE 2021, Tableau - Interactive Data Visualisation Software, Cross Platform App Development with Flutter, Entrepreneurship - A better career option and Recommendation Engine. They also collaborate with other professional bodies in the college and with their handy team building skills, they also made the Overseas Information Series event a huge success. Even in times such as these, the body has been consistently active and spreading knowledge was never compromised. I wish CSI-SAKEC a very best of their luck in their upcoming ventures that not only develop technical skills in students but also make them industry-ready by imparting various soft skills.

~With Warm Regards

Prof . Uday Bhave

Head of Computer Department

Message From

CSI-SAKEC Branch Co-ordinator

CSI-SAKEC is one of the vibrant student branches under the CSI Mumbai chapter with a motto of "Building Technical Skills Professionally".I truly believe that CSI-SAKEC has lived up to this motto since its inception in 2007. CSI-SAKEC organizes various technical and societal activities including expert lectures, seminars,technical workshops,training programs and inter-college events in diverse fields.

Due to the pandemic situation, many of the events after February 2020 were conducted in an online environment. Events conducted online helped students to remain engaged and motivated during the difficult period of countrywide lockdown. Some of the events were "Recommendation Engine", "Tableu-Interactive Data Visualization Software","Gateway to GATE 2021", "Cross-platform application development with Flutter & Dart", "Chatbot- Build Intelligent Virtual Assistant", "Ethical Hacking", "Getting Started with Bug Bounty" and "Amazon Web Services".To add a step towards realizing the dream of Atmanirbhar Bharat, we conducted a webinar on "Entrepreneurship – A better Career Option" in collaboration with Entrepreneurship and Innovation Cell of SAKEC so that young minds get motivated to become job providers instead of job seekers.

A 3-day webinar series on "Overseas Education Information Series" was organized to make students aware of the process of pursuing higher education from UK, Australia and Ireland. This year, CSI-SAKEC organized a 1-day International webinar on "Test-Driven Development using Java" which adds another feather to its cap

All of the above events were conducted by experts from industry that facilitate our students to bridge the gap between industry and academia. Most of the events were intercollegiate. The fact that we had to conduct multiple iterations of some events to accommodate all interested participants speaks volumes about their popularity and success. CSI-SAKEC cherishes the dream of becoming the number one student branch under CSI Mumbai chapter and contribute more towards the societal causes in the coming years. I whole heartedly thank all the coordinators of academic year 2020-21 who worked tirelessly and selflessly to achieve the set goals of CSI-SAKEC. I am also indebted to all my student participants who wholeheartedly participated and made all our events a grand success.

With Warm Regards
Dr. Rekha Ramesh
CSI-SAKEC Student Branch Coordinator

Message From
CSI-SAKEC General Secretary 20-21

It gives me immense pleasure and a feeling of utter pride to be associated with one of the strongest student chapters of SAKEC – CSI. Formed in the year 2007, our chapter has been growing ever since. The committee abides by its motto "Building technical skills professionally". We have successfully conducted various technical workshops, webinars and non-technical events for the benefit of SAKEC as well as Non-SAKEC students. CSI-SAKEC believes in providing valuable knowledge to everyone who is willing to learn. It is overwhelming to see how people are willing to contribute to the magazine with their extraordinary pieces of work. Cache has always been serving as a medium for the students to showcase their work in front of the peers, and the efforts have never once been wasted. It has become a legacy of CSI, and the CSI Committee 2020-2021 is obliged to carry it forward.

~With Warm Regards
Dhruvi Jain
General Secretary
CSI-SAKEC
20-21

Message From
The Editorial Desk

The CSI-SAKEC Editorial team is proud to announce the release of the latest issue of our annual magazine – Cache 10.0. As most of you are aware, our theme for the year 2020-2021 is 'Healthcare Technology'. Why did we plump for this topic? Healthcare technology is the topic of current interest, and with the scenario today worldwide, this subdomain of technology was a clear win. Healthcare technology includes electronic health records, tele-medicine, mHealth, remote health monitoring tools, prosthetics, and much more. The field also intersects with artificial intelligence and virtual reality, which clearly indicates the vastness of the topic. Cache 10.0 provides you with an opportunity to have a brief insight into the advancements of the field, by assembling the some of the most exciting updates in healthcare technology. The magazine is loaded with brilliant technical articles, submitted by our very own SAKEC members! CAUTION:...THE MAGAZINE IS A REAL FIXATION BEWARE!

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Health Is The Real Wealth

HEALTHCARE TECHNOLOGY

"It is health that is real wealth,and not pieces of gold or silver."~Mahatma Gandhi

Often, health isn't valued till sickness comes. In olden times, when not much technology was in the realm of the healthcare, Ayurveda and herbal medicines had tons of impact within the society but not many threatening diseases might be cured. They still have an influence but speaking in terms of technology then and now, has transformed drastically.Now-a-days you'll know your heartbeats at that specific moment within seconds on a watch! Was this even possible if technology had not evolved? So, this leap of technology within the healthcare sector are some things huge.

1.EHR Electronic Health Records (EHRs) is changing the medical world by replacing the outdated paper records.Nurses and technicians are liable for inputting patient data into a central, digitized system. Medical billers and coders appointments update patient records with test results (diagnostic codes) and submit medical claims to insurance companies.Not only can patients access their records at the press of a button, but it's also ensured that mistakes are caught more quickly without wanting to pore over unreadable physician handwriting.

2.USER FRIENDLY AND SPECIALIZED APPS Healthcare technology has spurred the event of various lifesaving apps, like people who remind people to require their medication, teach them best practices for care or give them access to doctors who can see their patients through telemedicine.

3.A PILL THAT MAY ELIMINATE TYPE 1 DIABTES INJECTIONS Insulin injections become familiar to several people living with Type1 diabetes, but because of healthcare technology, they'll soon be ready to take pills to meet their insulin regulation needs.

Health Is The Real Wealth

4.PROSTHETICS The prostheses are the synthetic devices that improve the standard of lifetime of a disabled person by replacing the missing or lost limb thanks to congenital disease or trauma or injury. The prostheses might replace the missing limb in terms of appearance, functionality or both.

5.CANCER TREATMENTS Immunotherapy uses the body's natural defense mechanisms to repel cancerous cells. These treatments are often less toxic and sometimes more effective than other sorts of therapy. Radiation therapies are any number of therapies that utilize different sorts of radiation to undertake and cause cancerous tumors to travel into remission

Non-invasive cancer treatments require no incisions during a patient's skin or excisions of living tissue. These reduce some recovery time related to cancer therapy, and would suit patients whose overall health precludes surgical or otherwise invasive treatment. One treatment involves injecting metallic nanoparticles, gold, carbon nanotubes or zinc ferrite into the tumor. Doctors then heat these nanoparticles up using magnetic fields or radio waves, killing the encompassing cancer cells. We have seen many positive the future!

~Shraddha Trivedi
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Healthcare Technology

The healthcare industry remains largely unpredictable. How the nation will regulate A healthcare going forward is an ongoing and ever-changing debate. At the same time,scientists continue to make huge strides in medicine and treatments, and you never know what new invention will come next.

(An image representing how a smartphone can be a life saver if proper HealthCare technology is used)

SOME OF THE FOREMOST AND PROMISING HEALTHCARE TECHNOLOGY OF THE YEAR 2020

Artifical Intelligence (AI) And Machine Learning

Artificial Intelligence has been a BOON for the humans by the humans.The rate at which Artificial Intelligence and Machine Learning are transforming the healthcare industry is tremendous.AI has the potential to transform millions of lives every year. AI is also evolving as a prodigious business in the subsequent years.The most prominent technology under AI is the.It is an expensive imaging technique that can detect or rule out health conditions/diseases.With the help of Google DeepMind's medica image-assistive AI,healthcare professionals can detect a number of sight-threatening diseases, and treat them before they manifest into something else

WEARABLE TECHNOLOGIES

Smartwatches and activity trackers like Fitbit, Garmin, or the Apple Watch are already mainstream.These wearable devices are moving at a fast pace in society and there are absolutely no signs of slowing down.This has generated a booming market,while insurers,medical professionals,and companies selling wearable health technologies are recognizing the benefits of keeping track of patients' and user's physical activity and heart rate.

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The Impact of Technology in Healthcare

Healthcare technology refers to any IT tools or software designed to spice up hospital and administrative productivity, give new insights into medicines and coverings, or improve the general quality of care provided. Technological advancements in healthcare have not only saved countless of patients but they are continuously improving quality of life of the people nearby. Technology within the medical field has had a huge impact on nearly all processes and practices of healthcare professionoals. Electronic Health Records (EHRs) has replaced the outdated paper records and has been a huge game changer for everybody within the medical world. Medical assistants to medical coding professionals to registered nurses are just a couple of roles that are impacted by this industry-wide implementation. Medical technology doesn't only affect your personal quality of life; it also affects the lives of thousands of medical professionals and students training to become doctors. There are substantial inward investments within the field of healthcare technology that not only help innovation, but also provide variety of high-quality jobs. The demand for more accurate and dedicated health-tracking devices has opened a replacement highly specialized niche: wearables. The following are five of the highest healthcare technology and healthcare industry trends and innovations that are

1)Improved Communication: Technological innovations in healthcare have facilitated much smoother communication within healthcare organizations. Medical professionals can now use media like video, online discussion platforms, and real-time meeting capacities to speak and advance the spread of data within the field.

2) Electronic Medical Records: Electronic medical records allow all patient histories, test results, diagnoses, and relevant information to be stored centrally in a web location. the info allows for more focused and accurate care also because of the ability to ascertain health trends for every individual. Medical billing systems allow hospitals, clinics, and medical practices to run far smoothly.

The Impact of Technology in Healthcare

3) Mobility and Mobile Apps: Mobile software applications are key to improving accessibility for patients and healthcare professionals. Mobile apps enable people to simply manage their health and wellbeing, everything from prompting them to urge check-ups, to finding general medical information or accessing their test results securely online 24/7 without having to book a meeting with their GP and wait days for results. Healthcare professionals on the opposite hand, can quickly access information concerning diseases and medicines, images for clinical matters, continued education activities than on.

4)Telemedicine/Telehealth: Telemedicine/Telehealth services like videoconferencing are getting cost-effective ways to enrich local health services. it's particularly beneficial to those living in rural, regional, and remote communities and remote communities and requiring regular access to medical specialists who live several km away.

5) Availability of knowledge and large data: The accessibility of data and therefore the means to store and process it's an indicator of the technological age. the web, intranet systems, search features, and therefore the ability for healthcare professionals to rapidly share information have enhanced the synthesis and analysis of knowledge. "Big data" in healthcare allows the whole field to profit from comprehensive research studies.

Dangers related to AI in Health Care Technology

1)While having a central point for all data information is extremely useful, overdependence may end in serious repercussions if there are connectivity or bandwidth problems. However, the most concern rising from Cloud computing technology and increased mobile use is security and data protection.
2)Information and communication technology (ICT) link healthcare professionals – also as professionals with patients. Email, smartphones, telemedicine, and telemonitoring systems all want to share information and are especially useful for more rural areas and locations with a scarcity of facilities and/or specialists.
3) Risk of Hacking of sensitive medical records and data by hackers. Despite the obvious concerns and risks, the importance of technology in healthcare outweighs all the disadvantages over its advantages. Amid the current COVID-19 situation, the technology in medical field and healthcare has been the most concerned topic and of utmost importance in our lives.

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Electronic Health Records

EHR contains the patient's records from multiple doctors and provides a more long-term view of a patient's health. An electronic health record (EHR) contains patient health information, such as Administrative and billing data, Vital signs, Progress notes, Medical histories, Immunization dates, Radiology images, Lab and test results, demographics, Diagnoses, Medications, history of patient's medical health and allergies.

Disadvantages

•Expensive Software and Hardware.

•EHR systems are vulnerable to hacking means sensitive patient data could fall into the wrong hands.

• Patients access to their medical data can create a situation where they misinterpret a file entry.

Advantages

•Providing accurate,up-to-date, and complete information of patients.

•Quick access to patient records.

•Helping doctors to diagnose patients more effectively and reduce medical errors

•Greater Coordination and Data.

•No Data Loss..

•EHR eliminate the need to store documents as paperwork, which frees up more space in the office.

•Few data could get lost during the transition from a paper-based to a computerized EHR system, which could lead to treatment errors.

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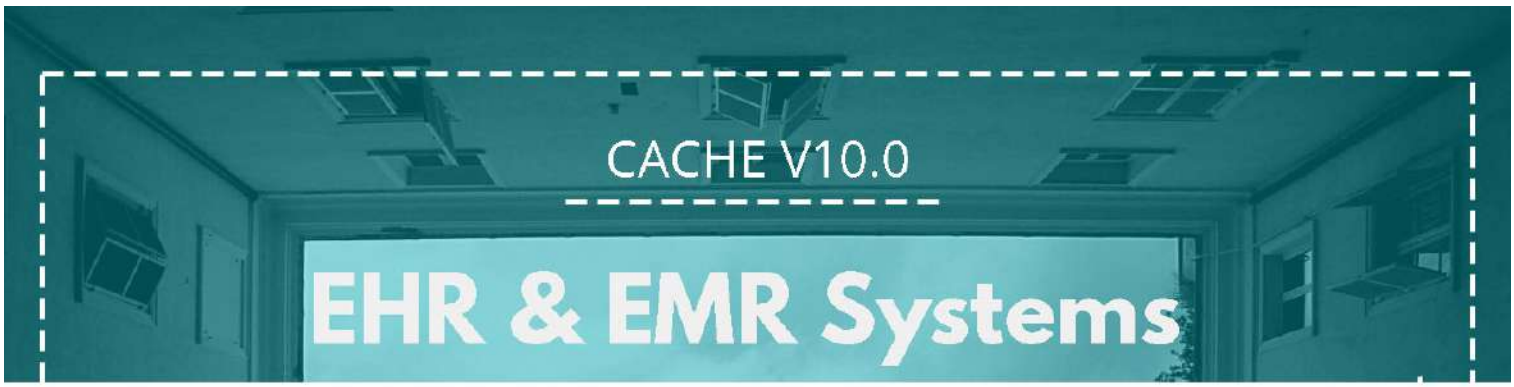

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EHR & EMR Systems

A digital representation of a patient's paper chart is called an electronic health record (EHR). EHRs are patient-centered, real-time documents that make information accessible to approved users immediately and safely. While an EHR system can include a patient's medical and medication histories, it is designed to go beyond traditional clinical data gathered in a provider's office and can encompass a wider view of a patient's care. Your company will contribute to a better future for our country by using EHRs. Abstract Electronic medical records (EMRs) are vital, highly confidential private information that must be exchanged regularly among peers. Blockchain technology ensures data protection, control over confidential data, and facilitates healthcare data management for patients and different actors in the medical domain by providing the tool to achieve consensus among dispersed entities without relying on a single trusted party. Smart contracts are implemented in Hyperledger by chain code, which consists of Logic and related World State (State). Data transfer takes time, because after a clinician receives a hard copy of the patient data, he or she must re-enter it into the system. If the symmetric key is compromised, the patient could generate a new one, run a proxy re-encryption algorithm on the data stored in the cloud, and then share a new key with the clinicians according to the desired access control policy.

While many people use the words EHR and EMR interchangeably, there are significant differences between the two. When it comes to health-care reform, the CMS still uses the phrase "meaningful use of an EHR." Issue lists, ICD-10 codes, prescription lists, and test results are all stored in the system, much like they would be in a paper map. Patients, the physician assistant, referring physicians, hospitals, and insurers will all communicate securely over the internet. Patient information can be quickly collected and transferred with structured data, and the EHR can be used to help with patient care.

An electronic health record (EHR) contains all this information and is sharable among authorised providers, health agencies, and clinics, while an electronic medical record (EMR) only contains information and records from one provider. EMR and EHR systems are both useful tools for clinics; however, there are some important differences between the two. When you purchase Athena practise EMR software, you are also purchasing the Quatris Healthco team. When Quatris Healthco fixes technological issues, clinic administrators and doctors become more productive—it is the intangible that stands out when looking at Quatris Healthco's steady growth as a business.

Telemedicine is a tool that makes healthcare more affordable, cost-effective, and improves patient participation. There are currently 29 states with telemedicine parity rules, which mandate private payers to reimburse telemedicine visits in the same way as they would for an in-person visit. Patients can now get a second opinion from the comfort of their own homes thanks to telemedicine solutions.

EHR & EMR Systems

HIPAA Messenger allows a paediatrician to safely exchange photographs,messages,and other data in order to make a diagnosis and treatment plan.

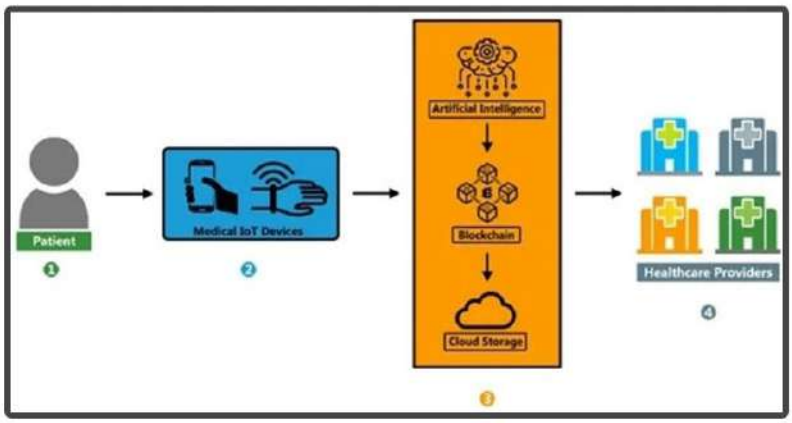
Telehealth Regulations

Laws governing Telemedicine Practice: While telehealth is not a new concept, its rapid advances in healthcare have left many organizations, policymakers,and vendors uncertain.

Many networks and IoT products, such as terminals, sensors, diagnostic equipment, wireless access points, and so on, make up the healthcare information and communication technology (ICT)infrastructure.This method suggests a higher rate of detection. The overhead cost of this new experiment, on the other hand, is twice that of the previous model. However, this can cause users to lose faith in the system.

Several security and privacy vulnerabilities in the current IoT ecosystem were found for further study in Khan and Salah's review paper, including safety during software updates for billions of IoT devices healthcare, for example), where blockchain could be used to improve security.

Figure 1. Internet of medical things (IoMT) in blockchain.

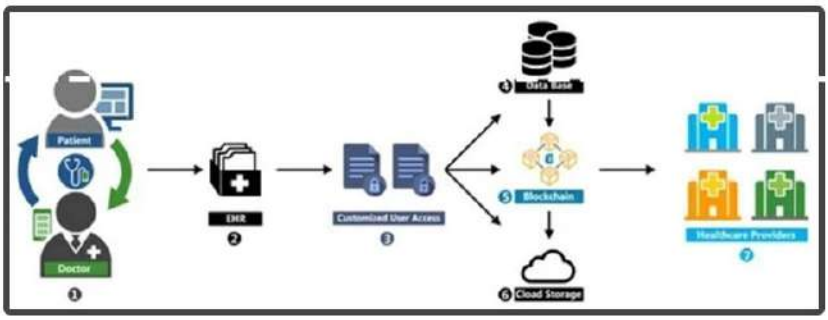


The emergence of blockchain technology as a responsible and open platform for storing and distributing data is paving the way for new possibilities in healthcare data safety, protection, and honesty. The rapid adoption of digitization in healthcare has resulted in the development of vast electronic patient records. One critical step toward making the healthcare system smarter and improving the quality of healthcare facilities, QoE, and new opportunities is the ability to exchange healthcare data without jeopardising users' privacy and data protection.

Traditional medical records are paper based, making it difficult to keep track of a patient's health condition over time. Physician practises were able to greatly increase the quality of care thanks to electronic access to health records. Better disease control and improved levels of preventive treatment are made possible by EHR. The healthcare sector is becoming more aware of its importance. Many studies have been conducted to establish blockchain technology for securing, sharing, and storing EHR data.

EHR & EMR Systems

Figure 2. Healthcare data management in blockchain.



The healthcare environment is set to be reshaped by blockchain technology. Not only will the process be open and safe, but the quality of healthcare will also improve as costs are reduced. Health records should be time-stamped on the blockchain so that no one can tamper with them once they have been added to the distributor ledger. Patients would have the ability to control who has access to their data and for what reason. The key issue that researchers must address is how the blockchain can function in complex and varied communication networks.

The Covid-19 pandemic has presented the health-care system with a bewildering array of problems. According to the writers, a redesign of the electronic health record must go beyond only fixing the user interface and enhancing interoperability. According to them, the overhaul must also assist hospitals in adopting the current value-based-care business model of health care. To meet these needs, the record must shift from a focus on a person's medical record to a focus on a person's health plan.

The EHR needs to be redesigned, but how can it be done? The "record" part of what happened to the patient is decent in EHRs. According to the writers, they must adapt in order to assist providers in planning for what they expect to happen Authors include.

An EHR framework that is "plan-centric" will have a library of care plans that cover a broad variety of scenarios. They say that such capabilities have the potential to change results and save many lives.
A full, reliable health record is essential for the delivery of treatment and is also available legal requirement. This is how Kaiser Permanente, Geisinger, Intermountain Healthcare, and UPMC use their EHRs. They ensure a large portion of their patients in addition to delivering treatment, so their financial benefits are similar to those of payers. The health-care sector is in the process of transitioning to a new business model that is being adopted by the rest of the industry.

Big data refers to large volumes of data that can be used to solve problems. That is why a variety of sectors, including the healthcare sector, are working hard to transform this opportunity into quality services and financial benefits

Furthermore, the availability of some of the most innovative and meaningful ways to interpret big data after review has made it easier to comprehend the operation o any complex system.

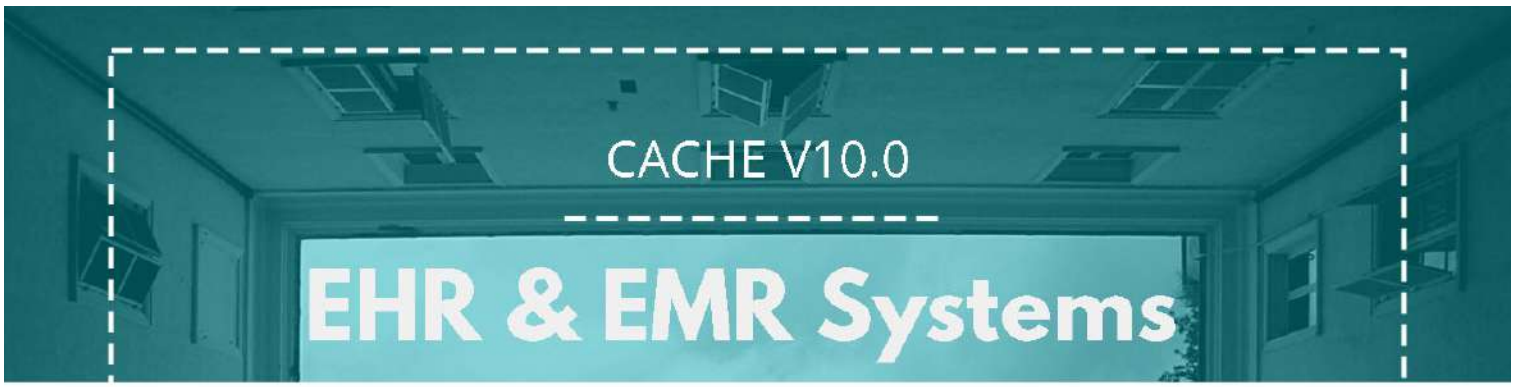
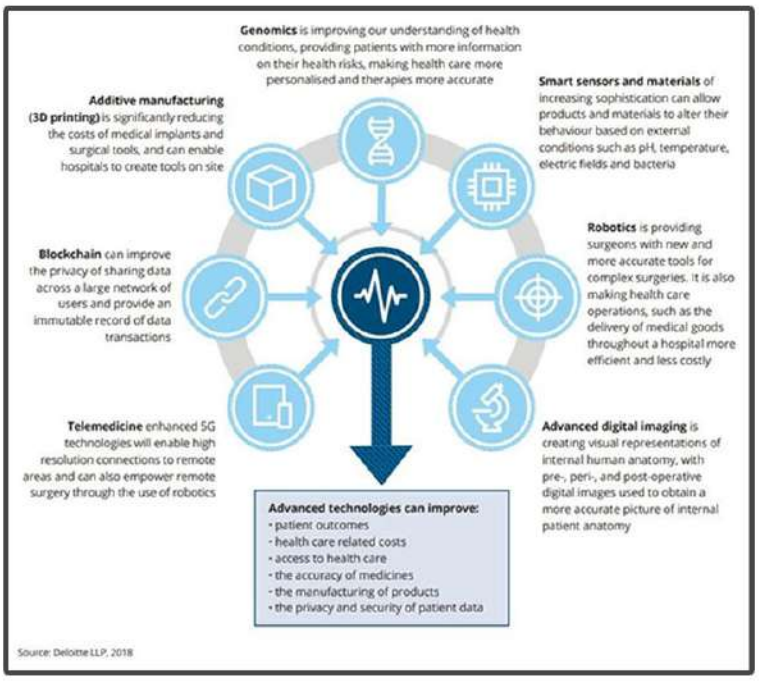


Figure 3. Technologies that can improve the pulse of healthcare.



Because of its unique existence, IoT data analysis will necessitate upgraded operating software as well as specialised hardware and software applications. Hadoop is being used in many major projects, such as determining a link between air quality data and asthma admissions, drug discovery using genomic and proteomic data, and other areas of healthcare. Such unstructured and standardised healthcare databases provide a wealth of untapped data that can be mined using advanced AI programmes to derive critical actionable insights in the context of patient care.

The groundwork for the implementation of the Electronic Health Record was laid by technology established in the 1960s and 1970s. The importance of knowledge in EHR is being recognised by large health care organisations and government agencies.

Growing concerns about healthcare coverage, privacy, and, most importantly, the protection of EHs continue to be major roadblocks to their acceptance.

The electronic transfer of medical data from one facility to another has become more common. Before 1992, it would have been difficult to anticipate the changes in the use and handling of EHR data brought about by new technology, especially the microcomputer and the internet. New developments and events have had, and will continue to have, a significant impact on potential EHR growth and use. These are normal everyday occurrences in many parts of the world, and modern medical care is reliant on them. The Institute of Medicine's 1991 guidelines specified that by the year 2000, every physician's office could use an EHR to enhance patient care, and the Institute of Medicine's issued rules and regulations focusing on patient privacy and confidentiality had only been partly implemented as of 2015. However, it is difficult to dismiss the incredible progress that has been made. Many developed countries are rapidly implementing electronic health records (EHR).

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EHR & EMR Systems

The information shared during a clinical encounter is considered confidential and must be kept private. This category does not provide information that cannot be used to determine the patient's identity, such as the number of patients with breast carcinoma in a government hospital. If EHRs are to work as intended, health care institutions, insurance firms, and others will need access to the data. Encryption refers to the process of encoding data in such a way that only approved parties can interpret it. A poorly designed user interface fails to provide the required level of service, resulting in user dissatisfaction.

The guidelines suggest a set of requirements for various health-care service providers in India to meet, ensuring that medical data is portable and easily transferable. Maintaining EHR in India, with a population of 1.27 billion people and just 160 million internet users, is a difficult task, but with the government's interest and help in its implementation, it will be accomplished soon.

While EMRs have numerous advantages, the future of health care necessitates that their risks be identified and efficiently controlled or avoided.

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Sensors and Wearable Technology

With the improvements in health care in the last few decades, residents of countries are now living longer, but with multiple, often complex, health conditions. They want to know some basic health parameters of themselves. Even younger generations are become health conscious and they are interested to have monitoring mechanism regarding their health condition. mechanism regarding their health condition. health care in the last few decades, residents of countries are now living longer, but with

In this context, wearable technologies has been developed and widely used.Wearable technologies enable the uninterrupted monitoring of human physical activities, behaviors, physiological and biochemical parameters during daily life. The most commonly measured data include few essential signs like heart rate, blood pressure and body temperature, as well as blood oxygen saturation, posture, and physical activities through the use of electrocardiogram (ECG), ballistocardiogram (BCG) and other devices. Wearable sensors, whilst the name implies are integrated into wearable objects or directly with the body so on assist monitor health revelant data for care.

In this context, wearable technologies has been developed and widely used. Wearable technologies enable the uninterrupted monitoring of human physical activities, behaviors, physiological and biochemical parameters during daily life. The most commonly measured data include few essential signs like heart rate, blood pressure and body temperature, as well as blood oxygen saturation, posture, and physical activities through the use of electrocardiogram (ECG), ballistocardiogram (BCG) and other devices. Wearable sensors, whilst the name implies are integrated into wearable objects or directly with the body so on assist monitor health and/or provide clinically relevant data for care.

Few companies are also seeing benefits in offering wearable healthcare technology to their employees. Device connectivity will expand as more accurate wearable sensors are developed, helping the insurers and employers to influence healthy lifestyles and boost profitability.

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Telemedicine/Telehealth

What is Telemedicine?

Telemedicine is term used for healing from a distance. it is the utilization of telecommunications technology to provide remote clinical services to patients. Physicians use telemedicine for treating people remotely using secure video and audio connections. Today, individuals not got to schedule an in-person visit with a physician to receive treatment.

What is Telehealth?

Telehealth is defined because the use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health education, public health and health administration. While this definition sounds like telemedicine, there's one distinct difference. Telehealth isn't a specific service, but a group of methods to reinforce patient care and education delivery .As technology within the medical field continues to rise, the two terms will likely become more distinguishable.

~Prerana Patil

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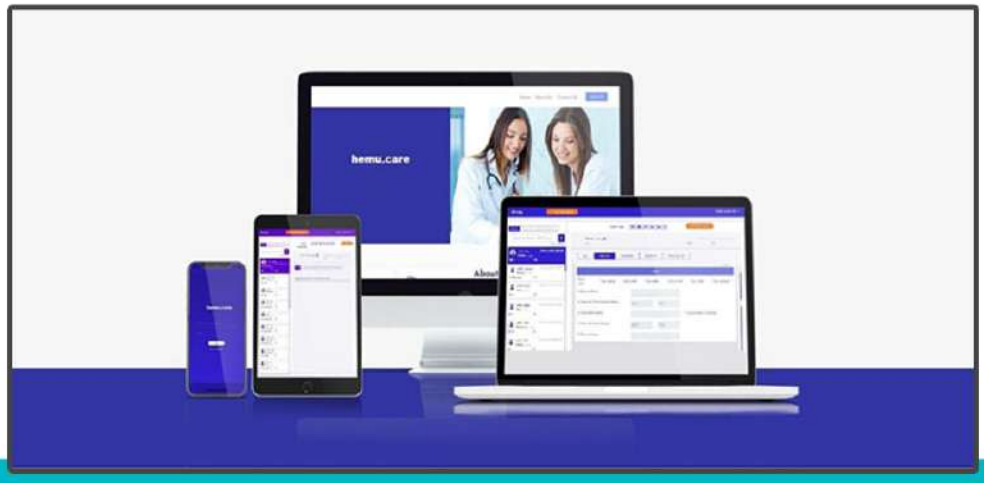
Benefits of Portal Technology



Patient portals help encourage better physician-patient relationships and provides patients more control over their treatment. They're able to check lab results, request prescription refills, update insurance related information, manage any unpaid balances and much more. Throughout this text we'll discuss what a patient portal is and therefore the way it is often beneficial for your health organization. It empowers the patient and adds a degree of power in care where they're going to become an active participant. No matter the type of platform you choose, your patient portal can increase their engagement alongside your practice and provide your patients with secure online access to their medical details. And to not mention that it does so while providing several benefits for healthcare providers also. variety of those benefits include Fewer Medical Errors, Streamlined Workflow, Promotion of Telemedicine, Increased Office Efficiency and rapid growth. employing a patient portal allows you to send appointment and payment reminders also as schedule yearly check-ups alongside your patients. This helps save time by automating the scheduling process and ensuring patients are kept within the loop. Portals can also be used to provide your patients with billing information, consent forms, educational materials and test results to remain them informed on their health. Sharing test results and educational materials can save time by explaining every little detail during an office visit. additionally, this permits you to determine more patients each day. If your patients have pressing questions, they're going to invite more details via the patient portal or wait until their next visit.

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Settings AND Chances OF E-Wellbeing Innovation IN Clinical Consideration.

Staying aware of a sound wellbeing is a crucial ideal for the people. It likewise goes about as a marker of the financial advancement of a country. Be that as it may, these days keeping sound wellbeing is testing a direct result of quickly expanding non-transferable infections. Simultaneously, we are on the edge of extremely quick mechanical progression which incorporates use of cell innovation, fast web and remote correspondences.

These advances and their remarkable applications are making heaps of new measurements in medical care framework which is known as e-Wellbeing.

The clinical call communities, crisis complementary telephone utilities are being utilized in everywhere on the world. The recently evolved electronic wellbeing framework can assume a fundamental part in the distant areas of arising and non-industrial nations albeit in some cases it appears to be troublesome because of the absence of correspondence foundation. E-Wellbeing can be a promising viewpoint for giving general medical advantages on the off chance that it coordinates with the ordinary clinical framework.

More essential methodologies are vital for the arranging, advancement, and assessment of e-Wellbeing. This article is composed to portray the current and future chances of e-Wellbeing in wellbeing emotionally supportive network.

INTRODUCTION:

Innovation has approached as a push to make life simpler in our everyday life. Change of innovation in the clinical area has arisen through various stages for example e-Wellbeing, m-Wellbeing, and Telemedicine. E-Wellbeing innovation can be utilized to scatter wellbeing related data or administrations among the medical services suppliers, patients, and centers. No matter how you look at it, e-Wellbeing is a portion of wellbeing informatics which incorporates m-Wellbeing and telemedicine.
Because of broad accessibility, the remote association outfitted with a cell phone has turned the interaction of correspondence quicker for the patients who additionally expanded the medical services usage. Versatile innovation is empowered to give the far-off observing advantages to the patients who are confined in portability yet needs constant intercession from centers. It can expand the probabilities to stay away from crisis condition by identifying his/her essential signs and bio-signals.

Exhaustive investigations are occurring in the field of medical services to find new gadgets and make applications appropriate for clinical practices. A definitive objective of eHealth is to guarantee a justify treatment for all gathering of patients and to improve patient security and infection results []. The point of this review is to momentarily examine the present and future utilizations of e-Wellbeing innovation in medical care.

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Settings AND Chances OF E-Wellbeing Innovation IN Clinical Consideration.

IMPLICATION OF E-HEALTH ON MEDICAL SCIENCE:

Right now, the world is encountering a critical ascent of cell phone clients, guaranteeing the figure is to be around 8.5 billion worldwide. The cell phone has become an imperative piece of our regular daily existence. In this way, any wellbeing related mediation through portable application requests high possibility of adequacy among the client. Worldwide Situating Framework (GPS), short message administrations (SMS) and video conferencing through WLAN/GPRS/3G organization to find a patient who needs quick help are accessible.

Conversely, the patient can decide his/her state of being by understanding self-bio-flag and can take a choice of when to go for specialist's consultancy. Constant infections are the most well-known reasons for death all throughout the planet. The customary arrangement of long winded consideration in the facility and emergency clinic based has discovered not to be sufficient to beat persistent infections. For instance, a coordinated consideration introduced inside a gadget can offer the COPD patients to approach into a self-administration; hence elevating the patient to acknowledge earlier treatment. As per World Wellbeing Association, expanded adherence to drug can uphold the patients with persistent infection to live in a superior manner.

Thusly, there are territories where the utilization of e-Wellbeing innovation is achievable and should be executed to expand patient consistence and treatment adherence.

Telemedicine is the most established type of eHealth which was presented during the 1920s. After the striking accomplishment of wellbeing informatics in giving patient consideration, the quick extension of eHealth innovation went forward during the twentieth century. As the vast majority of the e-Wellbeing innovation depends on the use of electronic correspondence, it has discovered to be acted in distant districts. Thus, e-Wellbeing can be utilized as an indispensable device in reacting the post-fiasco crisis to counter human utilities.

Telehealth offers a few advantages to the patients. Use of telehealth can expand the admittance to wellbeing administrations, improve arrangement of wellbeing instruction by giving financially savvy intercession. Another investigation showed that video conferencing innovation may be a less expensive and less tedious arrangement contrasted with customary standard medical services visits. Coordinating telehealth with the medical care establishment's electronic information base can lessen asset utilization and furthermore can improve therapy consistence for individuals who are homebound and debilitate. Subsequently, the patient can got themselves safe and keep a got life by using various gadgets which empower them to be set up in crisis condition too.

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Settings AND Chances OF E-Wellbeing Innovation IN Clinical Consideration.

EXECUTION OF E-WELLBEING INNOVATION IN SIGNIFICANT SCALE:

Electronic and web based information transmission, information stockpiling, information wellbeing and secrecy issues will turn into the significant worry in impending years. Also, utilizations of all advances have impediments, and they are not intended to give their advantages under each situation. For instance, a large portion of the wellbeing checking programming runs on the client's cell phone and investigations the information got from the sensors. For the more youthful age, utilizing such programming can be a characteristic decision. In any case, it tends to be muddled and a tested wonder for the more old populace. Medical services for all is fundamental, and it should be carried out in agricultural nations.

Execution of e-Wellbeing can possibly cover the wellbeing need of country individuals. In spite of the fact that giving the ongoing information can be a test for the individuals who are needing checking gadgets. Support and master taking care of to work these gadgets can be some way or another bulky too. e-Wellbeing is an umbrella term that joins medical services and innovation to help individuals in a more proficient manner, and it can likewise decrease wellbeing related expenses. Some created nations who have been executing wellbeing related mediations, they generally believe eHealth to be of main concern.

In any case, the productive utilization of eHealth relies on the multidisciplinary approaches. Groups should have the essential aptitude for the comprehension of explicit eHealth project. The group incorporates researchers, doctors, medical attendants, drug specialists, data innovation master, strategy creators just as the patients. Nonetheless, there is extraordinary guarantee that carrying out eHealth can improve the complete medical services framework in both created and non-industrial nations. eHealth is called to be a start to finish measure and is adjusted to use under all periphery. In this manner, we can take the advantage of e-Wellbeing by utilizing its diverse stage.

Under all conditions from birth enlistment to death vaults, screening to follow-up, crisis mediation to homecare e-Wellbeing innovation can be utilized as an imperative device. Clinical Choice Emotionally supportive networks to the PC design of explicit programming applications which can give Clinical Choice Help (Discs) to the patient. In future, Compact discs will help medical services suppliers to take exact choices by giving fast and proficient admittance to pertinent clinical information and will actually want to improve the wellbeing foundation. In this way, it may assist a ton with lessening the treatment cost and give better administrations to the patients. Notwithstanding, there are numerous impediments and difficulties for the turn of events, execution, selection and acknowledgment of CDSS which can be the future chance to investigate.

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RTLS Applications Grow With Hospital Data Needs

Another growing data monitoring tool, real-time locating services, are helping hospitals consider efficiency and instantly identify problem areas. RTLSs have two core applications in hospitals that is asset tracking and patient tracking. Asset tracking could even be an honest due to urge started if a hospital is new RTLSs because it's an honest horizontal impact across the organization, from clinical engineering to nursing staff.

Asset management is that the foremost RTLS service that provides maximum value for hospitals, manufacturers say. The automated tracking of staff, patients and equipment offers a return on investment in terms of saving time, money and outcomes.

Beyond asset management, RTLSs are also used for patient flow tracking in hospitals and outpatient clinics; freezers and rooms, environmental monitoring of refrigerators; staff backup when assistance is needed; and patient rounding.

Increasingly, existing RTLS solutions are being leveraged to strengthen patient workflow within hospitals and clinics.

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The Future of Nanotechnologies in Health Care

Various networks are often a part of the nanotechnology architecture of HealthCare Ecosystem. which may be explained as Off-body Networks, On-Body Networks, and intra-Body Networks. On-Body Networks are clearly occuping in body area networks and wearable devices that enable the mass customization of health monitoring and alert application and brings the health services closer to the patient's personal space. Off-body networks are situated within a person's context e.g. hospital, street, home, vehicle. These networks can provide common health and environment monitoring services also as support application for comfort living.

Lastly the intra-body networks are alleged to be deployed at different locations inside the physical body itself either as connected, internetworked Nano-devices or as embedded smart monitoring devices.

The deployment of nanonetworks won't be limited to the physical body only it is often deployed on to the human's body or within the patient's contextual environment. The devices monitor the patient's body routine and checks various conditions depending upon its ability. Context awareness is another challenging aspect for nanonetworks. Networks deployed outside of the body are often geographically tagged and may communicate with external environment so as to work out and update their context.

Applications got to coordinate multiple contexts for more specific services that can enjoy the mixing of intra body networks also as external networks. For example, an on-body network can detect the change of context for patient and be alerted by an environmental network about the presence of certain allergen to which the patient is sensitive.

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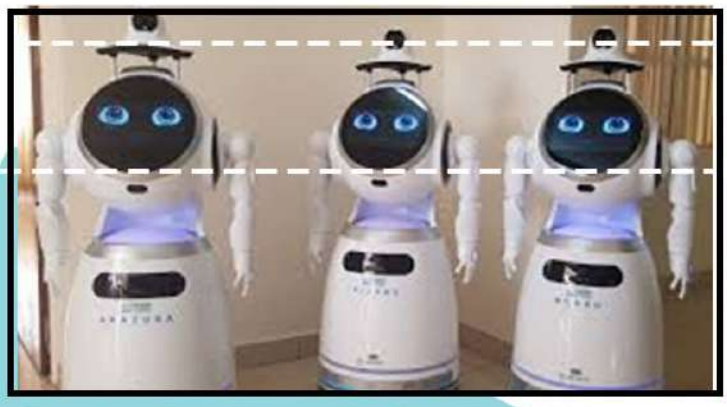
NUROBO: An e-nurse



Nurobo is a concept of e-nurse. It's a robot to replace nurses especially in case of contagious diseases like COVID-19. The main work of the nurse is to take care of patients admitted to the hospital. In the operation theatre, nurses accompany doctors for providing medical instruments while operating the patient. The nurse remains in contact with the patient for much of the time so her life is at stake. So, all the work of the nurse can be done by a robot.

A fully functional Nurobo is a combination of IoT and robotics concepts. This field Internet of Robotic Things [IoRT] is very helpful for human beings as it automates things and lessens human efforts. Nurobo is programmed in such a way that it can be handled using a remote control or using voice commands.

Nurobo will have all data stored with him, that where things are placed in the hospital and will have a tracker using which it can track the route to the things. It will also have an emergency storage area where all first aid things can be stored.

Doctors can set the medicines, food and other things in the database and Nurobo will have all stored in the storage area in its body, and will give to patients on the set time. Nurobo can even perform the primary treatment tests like temperature checking using an inbuilt electronic infrared thermometer into one of its hands.

Similarly, oxygen level, heartbeats, and sugar can also be checked. As in hospitals, doctors have a round to see patients well-being, that time patients file is needed which is typically stored in the hospital record room, So Nurobo can bring the file from the record room to the doctor by taking file number input. Even a digital copy of the file can be seen on the screen attached to Nurobo body.

In the operation theater, nurses assist doctors by providing operation instruments like scissors, forceps, clamps, probes, or cotton balls, applying oxygen masks, adjusting the light of the operation theater, and lifting patients' beds. All this work can be done using Nurobo through voice commands.

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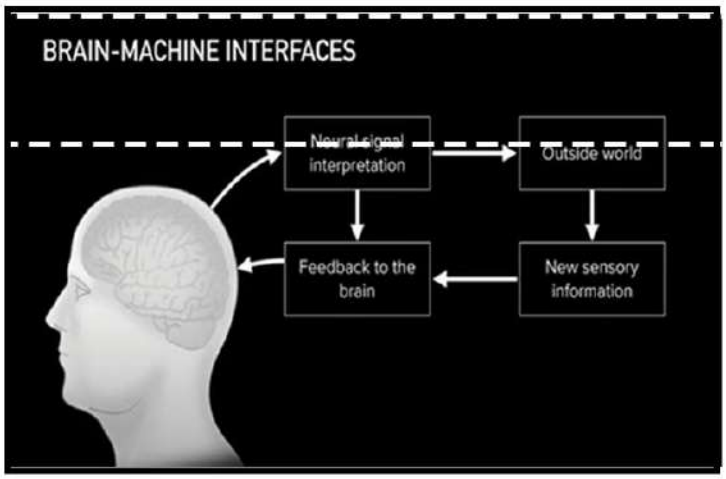
Neuralink: A Step towards Connecting Human Brains over Internet



In recent year, We all have heard of technological progress brought about by the Billionaire Elon Musk in fields of Solar Driven Vehicles by Tesla and Space Travel by SpaceX and other various fields and now a new Company Co-founded by Elon Musk has brought forth Technological Advancement in Medical Field by introducing Neuralink, A device that will be surgically implanted into your brain and with it, you'll be ready to communicate with machines and even control them.

It will also help study the electrical signals within the brain and reach solutions which will help cure various medical problems.
In order to know how Neuralink works you need to understand that your brain sends information to different parts of your body using neurons.

These neurons in your brain connect with each other to create a large network and communicate using chemical signals called neurotransmitters.
This reaction generates an electric field and you'll record these reactions by placing electrodes nearby. These electrodes can then decode the electrical signal in your brain and translate them into an algorithm that a machine can read.

This way Neuralink will be able to read what you're thinking and find a way for you to speak to machines without even opening your mouth. So no more screaming out "OK Google" or "Alexa".

The company said that the initial phase of the project will concentrate on helping the healthcare industry. The device will be able to help paraplegics with simple tasks like operating a phone or interacting with a computer. It can be used to treat epilepsy.
In an interview, Elon Musk said that the device will also be able to help regain someone's eyesight even if they have lost their optic nerve. He said that this technology, in theory, will be ready to fix anything wrong with the brain.

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Neuralink: A Step towards Connecting Human Brains over Internet

Musk added that Neuralink can also be used to restore memory, speech and movement of a paralysed person. There is a possibility that Human brain could be able to help humans interact with each other without the need to actually talk. He didn't specify if we would need to learn a particular language for this but he said it'll be possible.

In a Recent video released by the company we see fascinating glimpse of a nine year old Macaque playing MindPong (An Arcade Game Controlled by mind), who had a N1 chipset (Neuralink) implanted in his brain the Macaque named pager plays the game with his mind as the electrodes in his brain receives the neural activity which is decoded by an algorithm the output are fed to the game an unplugged cursor is given to pager for the sense of habit, The cursor is controller completely the pager's neural activity. This is an example on how a person with paralysis can control a computer just by thinking.

The most recent news by the company is about how users will be able to stream music directly into their brains. This will require a hardware call link to be attached to the back of the ear which is able to directly communicate with the Neuralink to stream music.

You're entering the realms of AI, the possibilities are endless! Imagine, you won't need a physical communication device like a smartphone or a laptop to connect with people. With this Technology, Soon we can help people with diseases like paralysis to communicate and even more.

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Machine Learning for Depression Detection

Machine learning applications can potentially improve the accuracy of treatment protocols and health outcomes through algorithmic processes. For example, deep learning, a type of complex machine learning that mimics how the brain functions, is increasingly being used in radiology and medical imaging. Using neural networks that can learn from data without any supervision, deep learning applications can detect, recognize and analyze cancerous lesions from images.

Faster processing speeds and cloud infrastructures allow machine learning applications to detect anomalies in images beyond what the human eye can see, aiding in diagnosis and treating diseases. Future advancements in machine learning in healthcare will continue to transform the industry. Machine learning applications under development include a diagnostic tool for diabetic retinotherapy and predictive analytics to determine breast cancer recurrence based on medical records and images.

In today's world and especially with the current covid and lockdown times going on, mental health has become a major cause of concern for not just adults but youngsters and children alike. .

According to a 2018 WHO study, India is the most depressed country in the world and the economic losses which we will be facing due to poor mental health of our people is to the tune of over a trillion dollars

One out of every 5 Indians suffers from some or the other mental illness. Even developed nations like the US, Russia and China are members of the list of top 7 countries.

Machine learning can be used to not only detect but also prevent mental health issues like depression, anxiety, substance abuse, bipolar disorder, etc. One of the main reasons for such issues is the lack of people to talk to and express your emotions. Though we humans are becoming good at not expressing our feelings but our tone, expressions and body language do not as much support us. These are some of the key factors which can be used in machine learning for mental health.

One of the most common mental health issues is clinical depression and machine learning can be used to detect it at a very early stage so as to prevent people from going too far into it and hence reducing suicides too.

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Machine Learning for Depression Detection

Many scientists and researchers are working on various ways to detect early signs of depression. Symptoms of depression can be - feeling sad, empty, anxious, worthless or hopeless, loss of interest in activities, lethargy, not being able to concentrate, changes in appetite, headaches, cramps, etc.

Image 1 Depecting Depression

All these symptoms can cause changes in your speech which include both the kind of words you say and the way you speak, your facial expressions, your body posture. These factors along with your food and sleep patterns can be used to detect the type as well as stage of depression. Various machine learning models can be used depending on the data we have like CNN, LSTM, SVM, Naive Bayes, Random Forest, etc.

In our project we have taken audio samples of around 200 people from the DAIC-WOZ Depression Database compiled by University of Southern California.

This dataset consists of the audio files of the patients ranging from 7 minutes to 33 minutes along with the transcripts, facial features and PHQ-8 scores (a questionnaire used by psychiatrists). For our project we were interested in just the speech so we have just used the audio files. Using the speech, there are two approaches, viz. the words used and the tone. Further we concentrated on just the tone of the patients.

Since the dataset was labelled, we splitted the patients into depressed and not depressed. Then, we splitted the audio files into small segments of 5 seconds to increase the amount of data. On these splitted audio files, we performed feature extraction by converting these audio files to spectrograms.

Then, all these spectrograms were fed to a custom made CNN model to train it. Though due to the lack of data, the accuracy achieved was just 68% but this can be increased by adding more data as well as considering the words and all the other factors mentioned above. We have also published an article in IJFGCN which can be accessed here.

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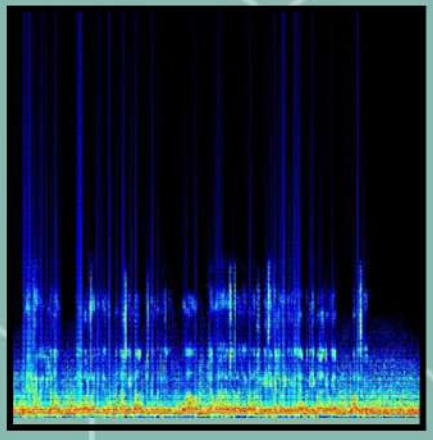
Machine Learning for Depression Detection

Image 2 shows a spectrogram

Further a mobile application can be made which will be connected to this model which is hosted on a server.

Anyone can use this application as their personal audio diary and whenever they feel low or high they can speak up their feelings to the app which will log their feelings and also convert this audio to spectrograms and send it to the model on the server where the model will detect whether the person is depressed or not.

The results of each audio session will be sent to the person's psychiatrist and whenever the person has a session scheduled, the psychiatrist will be able to treat the person better as he knows what triggers made the person feel good and he may ask the person to repeat them.



To conclude, machine learning plays an important role in modern health care and can be used wisely to not only ease the doctor's work but also to better treat the patients in many ways and seems to have a bright future if used wisely.

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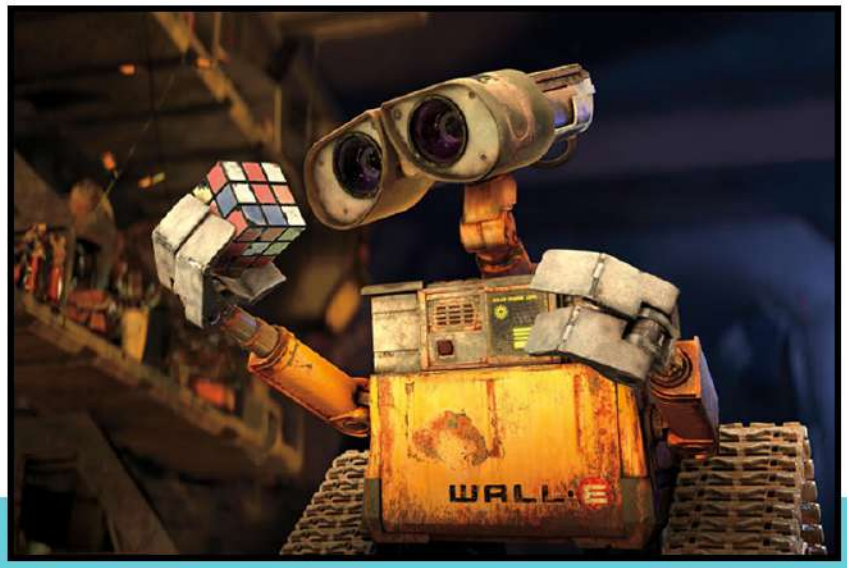
Will Robots replace Doctors?



Humans will always be needed for specific tasks and the use of robots and A.I. could even cause expanded employment and increased wages. Moreover, A.I. will transform the meaning of what it means to be a doctor. Some tasks will disappear, while others are getting to be added to the work routine. At this, you'd not trust a robot or a wise algorithm with a life-altering decision; or even with a choice whether or to not take painkillers, for that matter.

We don't even trust machines in tasks where they're better than humans – like taking blood samples. We'll need doctors holding our hands while telling us a couple of life-changing diagnosis, their guide through therapy and their overall support.
An algorithm cannot replace that. Data, measurements, and quantitative analytics are a crucial a neighbourhood of a doctor's work. It'll be even more critical within the longer term.

Fixing a diagnosis and treating a patient aren't linear processes.
It requires creative and problem-solving skills that robots will never have. More and more experienced digital health solutions would require qualified medical professionals' competence, no matter whether it's about robotics or A.I.
No robot or algorithm could interpret complex, multi-layered challenges. While they go to supply the data, interpretation will always remain an individual's territory.

However, there are responsibilities which technologies cannot perform. there'll always be tasks where humans are getting to be faster, more reliable – or cheaper than technology. E.g., While IBM Watson can sift through many pages of documents in seconds; it'll never be able to do the Heimlich manoeuvre.

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Things That Might Excite The Healthcare Futurists In 2021

WHO defines healthcare technology as "application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives". In simple words... well, I don't think there's a simpler way to explain this. In today's rapidly advancing world, technology is becoming tremendously relevant in every industry, as well as in our routine personal lives.

The field of healthcare is benefitting a lot from the technological advances. So here are some of the most prominent breakthroughs in the field of healthcare technology:

Artificial Intelligence: What is the first thing that comes to your mind when you hear the words Artificial Intelligence? Chatbots? Text-to-Speech engines? Voice recognition systems? Well, if these are the only things that come to your mind after hearing AI, then you're really underestimating it. According to healthcare weekly, "The use of artificial intelligence within the healthcare industry is expected to grow rapidly at an annual rate of 40% through 2021 – to $6.6 Billion, from approximately $600 Million in 2014." AI is used in this field by automating reminders for patients as to when they must take their medications. Besides, it is not only identifying people at high risk and those who require immediate medical attention, but also making personalised dosage recommendations based on each patient's unique body chemistry and associated environmental factors.

Virtual Reality: Virtual Reality assists in transporting you inside the human body – to access & view areas that otherwise would be impossible to reach. Robotic surgery is a recent innovation, where surgery is performed by a robotic device, controlled by a human surgeon. VR is not just helping doctors, but patients as well, due to its ability to provide a view of the inside body which sometimes helps doctors to explain problems effectively to patients.

mHealth: "mHealth" is an abbreviation for mobile health. It is defined as the use of mobile and wireless technologies to support the achievement of health objectives. There are over 318,000 health apps in the market today. Doctors/Physicians can now have instant access to any type of health information they need, from patient health history, research information and more.

When analysed by experts, technology in healthcare is a boon. It reduces healthcare costs, improves quality of life, and helps reduce preventable deaths, predict epidemics, and so on. A lot of people believe that technology in healthcare "can never replace a doctor's touch", and well that is not the goal in the first place. Technology in healthcare is only going to aid the doctors provide effective treatment, not replace them.

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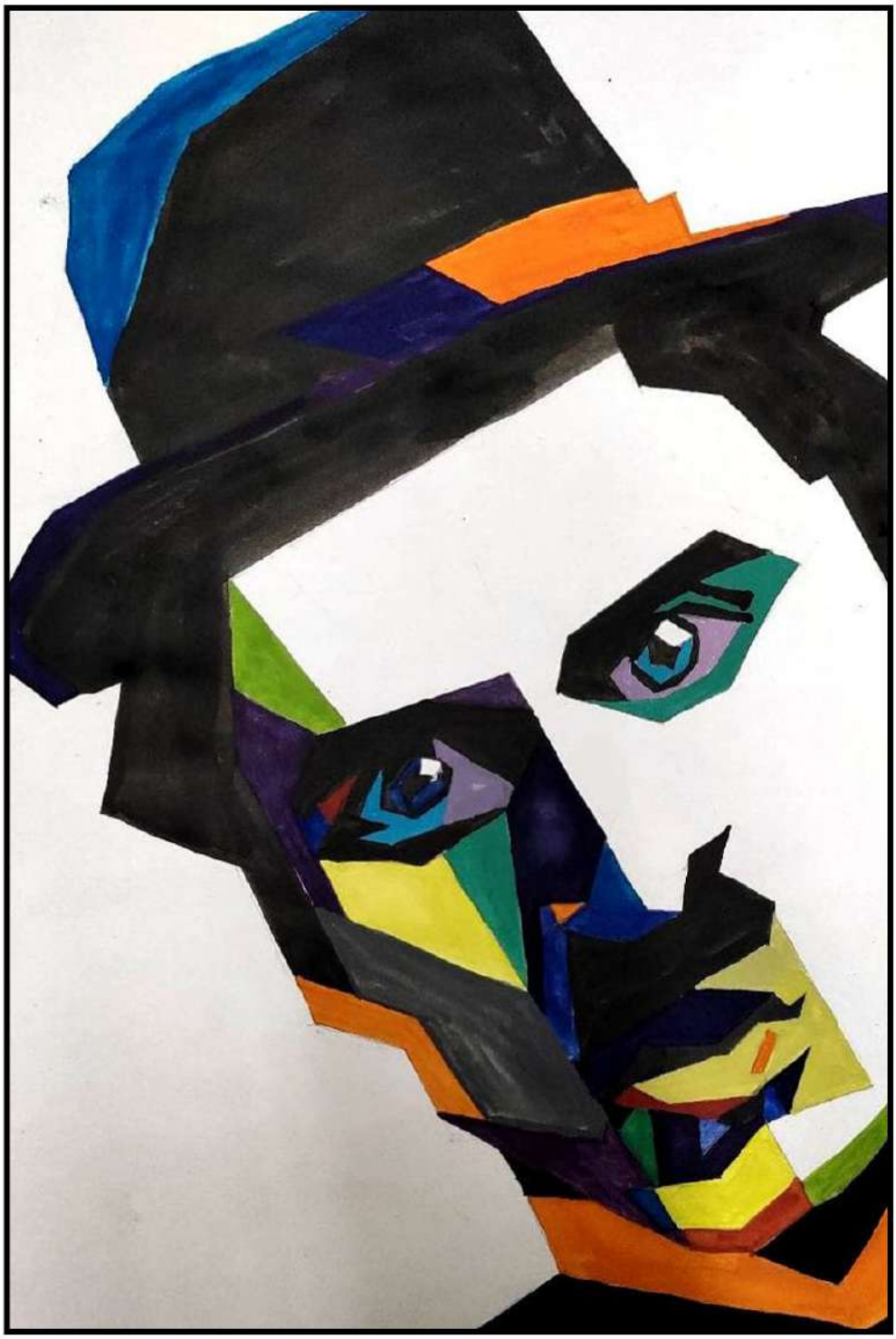

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CSI EVENTS

CSI SAKEC is one of the student chapter in SAKEC which focuses on improving the technicalities of the students and helping them to cope up with the present industrial requirements by conducting various workshops, seminars and visits. CSI SAKEC also helps to develop soft skills of the students. Amid COVID -19 pandemic, CSI SAKEC actively conducted various Hands-On workshops, Seminars and sessions during the Online Academic year 2020-21.

1)Ethical Hacking:

The 5 Day Hands-On Online Workshop was based on Email spoofing, Phishing, Network Recon, tMiTM attacks, Metasploit attacks, Android phone hacking, Wi-Fi cracking, Password cracking, Website attacks. It ended with great feedback from the learners. They showed considerable interest in future workshops. It was our first online Workshop during this pandemic.

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CSI EVENTS

2) Chatbot - Build Intelligent Virtual Assistant:

The workshop covered various topics such as Developing nuts and bolts of chatbots, custom development of Chatbots from Scratch, basic understanding of Chatbots and their business Use-Case, and developing Chatbots using minimal code. The workshop was conducted by Mr. Ali Mustufa Shaikh who INTEL Software Innovator and Google Certified Educator.

3) Test-Driven Development using Java:

An International Webinar was conducted by CSI SAKEC in collaboration with Computer Engineering Department of SAKEC. The Webinar included topics such as Introduction to TDD, Junit framework, TDD cycles and a hands-on demo pertaining to writing a piece of code with all different test cases was given by the speaker. All the participants were provided with signed E-certificates of appreciation on successful completion of the webinar.

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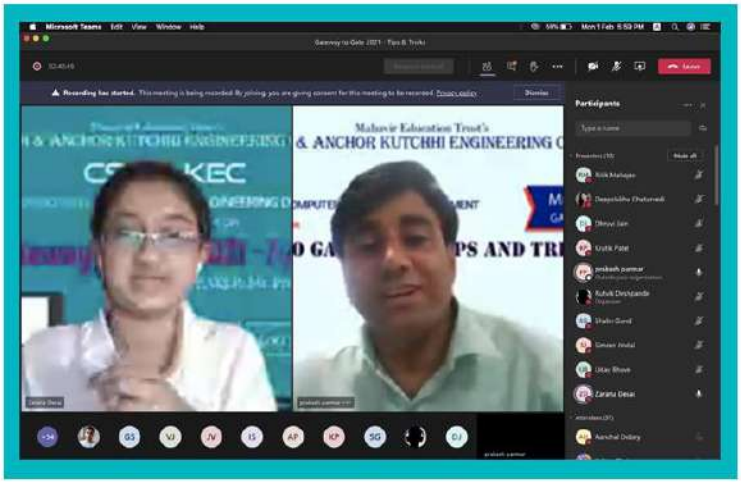
CSI EVENTS

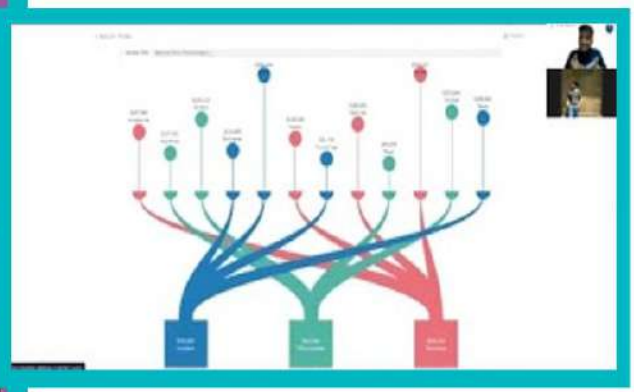
4) Gateway to GATE 2021 – Tips & Tricks:

CSI-SAKEC conducted one day online session for GATE 2021 CS/IT Aspirants. The Speaker of the Seminar not only covered major topics such as Importance of GATE Examination, Benefits of GATE, tips and tricks to crack the examination smartly but it also motivated students and was a stress buster for them a few days before the examination.



5) Tableau - Interactive Data Visualization:

The 5-day International Online Workshop covered all the basics and some hands-on practice on the Tableau software. It included Importing data, data visualization with pie, bar and stack bar charts, map layers, creating fill maps, discrete line chart, continuous line charts, dual axis charts, cross tabs, scatterplot, histogram, and dashboard. The Workshop was conducted by the Ambassadors of Tableau Software itself. Some perks and benefits for the participants were also provided.



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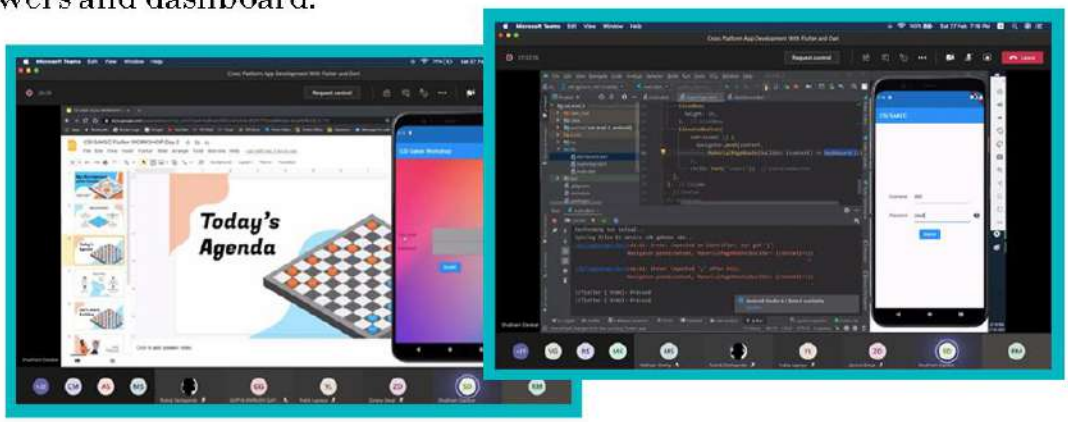
CSI EVENTS

6) Cross Platform App Development with Flutter & Dart:

The 3 Day Online Hands-On Workshop on Cross Platform App Development with Flutter & Dart was conducted by Mr. Shubham Darekar who is a final year student of VSEIT. The speaker of the workshop covered various topics such as Introduction and basics of flutter and dart, widgets, android studio setup, building an app with features such as logging in/out, app drawers and dashboard.



7) Entrepreneurship – A better career option:

CSI SAKEC in collaboration with Entrepreneurship and Innovation Cell conducted a session on Entrepreneurship as a better career option for our young enthusiasts. All the major topics such as What entrepreneurship is, how entrepreneurship is different from traditional business - Role of innovation, creating value, myths about entrepreneurship because of which people choose to keep away from it, obstacles in starting your own business venture, improvements and new initiatives by Government for giving encouragement to entrepreneurship, essential qualities for becoming an entrepreneur were explained by the speaker.

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CSI EVENTS

8) Overseas Education Information Series:

A 4-Day Overseas Education Information Series was conducted where the speakers:
1.Ms. Shivani Bhalla from Brunel University, London.
2. Ms. Pinky Desai from Monash University , Australia.
3. International speakers from Dublin University, Ireland.
4.Mr Sudipta Roy from Stevens Institute of Technology, very candidly discussed various specialized programs offered by their University and prerequisites for the same.
They also addressed the queries of attendees regarding the applications, scholarships, eligibility, placements, etc.

9) Develop Recommendation Engine Using Python: Understand Techniques and Algorithms:

CSI SAKEC in collaboration with AI Probably and Computer Engineering Department had organised a One Day Online Session on developing a recommendation engine using Python. The Topics that were covered by the speaker during the online session were Collaborative filtering, Approaches for collaborative filtering, content-based recommenders, implementing various recommendation system algorithms in python, creating a recommendation system and developing deeper understanding in recommendation systems and their user cases.

TESTIMONIALS

Mr. Milind S Khairnar
Assistant Professor,
Computer Engineering Department

"CSI SAKEC is a very vibrant professional body which is keen about overall development of the students. The highly motivated team organises the programs which shapes several aspects of the personalities of the students. The themes of the programs and selection of resource persons tells about class of their work. Their indomitable determination can be seen when they are organizing the programs of same quality even in this difficult time of pandemic. Great going, CSI-SAKEC! Keep it up!."

Ms. Vaishali Hirlekar
Assistant Professor,
Computer Engineering Department

"CSI team has been always working close with each and every Student activity in computer society chapters. It's vision is to enrich the activities and interest of students in Computer Related Fields. I always found that SAKEC CSI team is highly professional, enthusiastic, self motivated and passionate about what they do, and they do it with complete dedication and commitment. They know their job very well and hence they had successfully conducted many virtual activities effortlessly in the last academic year during this pandemic. Keep up the good work team"

Parth Sharma
Chief Data Scientist,
Jasper Colin Research

"As a Data Scientist and an educator, I am always looking to share my experiences to fill the gaps students have related to Tech jobs, Internships, Work-life balance. Thank you, Shah And Anchor Kutchhi Engineering College for letting me conduct an amazing session on "Developing Recommendation Engine using Python". I also thank CSI-SAKEC for organising such an amazing event!."

TESTIMONIALS

Chintan Chheda
Analyst, Capgemini
Alumni

"Joining CSI-SAKEC was one of the best decisions I made in my college life. As I not only gained knowledge about various technologies but also learnt very important skills such as teamwork and leadership
CSI-SAKEC facilitated me in making a small yet meaningful contribution while simultaneously being a part and benefiting from it.."

Ishan Parekh
MS in Information Management, Syracuse University
Alumni

"As the General Secretary of CSI-SAKEC, I had the opportunity to organize and conduct various educational and scholarly workshops for the students and faculty alike.
This experience provided me with skills like leadership, teamwork and time management. All these skills proved to be a massive boon for me in my future professional life and they continue to do so even today.
CSI Sakec was instrumental in helping me gain practical exposure to theoretical concepts that I learnt in class. This practical exposure helped me in tackling several job nterviews and prepared me for several challenges that lay ahead. The base at CSI provided me with an opportunity to be a part of the student council in my final year of Engineering."

Salil Deshpande
Software Engineer, Facebook
Alumni

"I'm extremely glad to have been a member of CSI.
I loved attending the workshops because they would always be a combination of fun and interesting, and they helped me explore many topics which were relevant to the latest trends in the industry. Moreover, the soft skills I gained from volunteering and being a part of the core committee helped me tremendously in navigating through my professional life!."

TESTIMONIALS

Himanshu Mukane
Student
FE, IT

"CSI SAKEC is a vibrant and enthusiastic body of our college. Also, being a part of CSI SAKEC helped me develop a sense of responsibility leadership skills, teamwork, self-confidence etc. The entire faculty and Student Coordinators leave no stone unturned to shape one's future. Huge respect and love for entire faculty members and Coordinators for encouraging me to think globally and creatively.."

Yash Ughade
Student
SE, Computer Engineering

"The event "Ethical Hacking" was the best event that I took part in. It helped me to learn things that I wanted but in a very easy way and that has encroached me to learn more and more and more about how to hack your own devices. The speaker also taught us about what goes in the back when you run some commands. It also helped me to prevent unwanted hacks to my own devices which was the best part of the event.."

Shubham Darekar
Student
B.E., VESIT

"I have taken several workshops covering different tech related topics to help my peers and juniors in learning new technologies. But enthusiasm and curiosity shown by students at Shah And Anchor Kutchhi Engineering College was unmatched. Thank you, CSI-SAKEC for organising and letting me conduct such an amazing session on "Cross Platform App Development with Flutter & Dart" in Shah and Anchor Kutcchi Engineering College.."

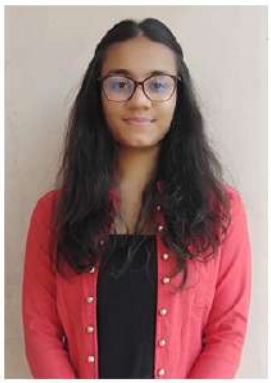
THOSE WHO MADE IT HAPPEN
CSI COUNCIL 2020 - 2021

Dhruvi Jain
General Secretary

Yukta Lapasiya
General Coordinator

Pratik Upadhyay
Student Coordinator

THOSE WHO MADE IT HAPPEN
CSI COUNCIL 2020 - 2021



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